

Interactive Music Studio : The Soloist

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ABSTRACT

In this paper, we present and demonstrate Samsung's new concept music creation engine and music composer application for mobile devices such as touch phones or MP3 players, 'Interactive Music Studio : the soloist'.

Keywords

Mobile device, music composer, pattern composing, MIDI

1. INTRODUCTION

We have developed a new concept music creation engine and composer application based on MIDI format, for mobile devices (such as mobile phones or MP3 players) at Samsung electronics.

In this demo presentation, we will demonstrate its first implantation on Samsung's Cubic37 (LCD size 3.7 inch) touch phone (next generation concept mobile phone not commercialized in the market yet.)

2. The Interactive Music Studio Project

The Interactive Music Studio Project at Samsung has various music-related components regarding advanced music specific functions and applications especially for mobile devices. The most exciting and interesting part of the project is considered to be the new concept music composer application, called 'the soloist'.

The soloist is composed of three independent user interface modes. That is, the solo performance (keyboard and handle based), the master setting mode and the pattern composing mode, which are described briefly as follows,

3. User Interface Modes

3.1 Solo Performance Mode (keyboard)

The Solo Performance Mode is the first and most important mode that user plays his/her own melody using the chosen instrument, on top of the background music. (called 'the template music'.)

The background music is initially a recommended music template (based on the combination of different music pieces with several instruments at the same time). However, the

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Master setting and Pattern composing mode is provided for the user to change any music style and instrument combination of his/her choice.

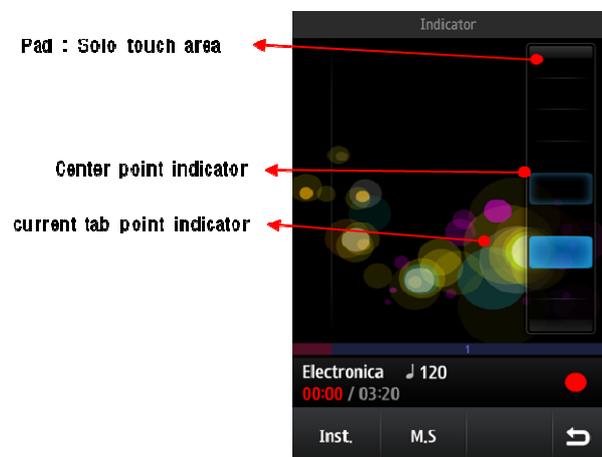


Figure 1. The Solo performance Mode (keyboard).

3.2 Solo Performance Mode (Handle)

The Solo mode can be change to 'the handle mode', where the use can hold and drag or tab the handle and actually 'draw the music' (with various graphical effects provided for difference instruments/style).

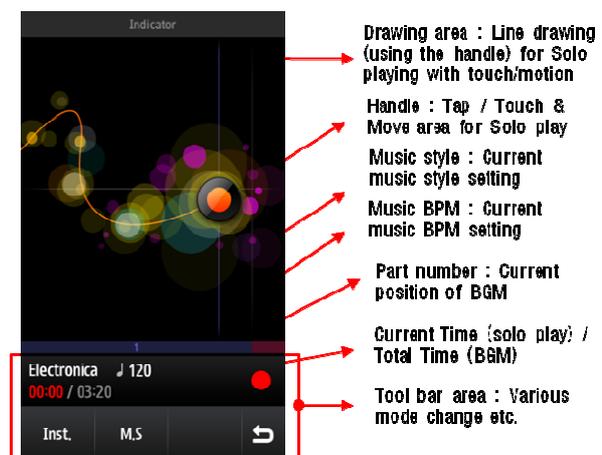


Figure 2. The Solo performance Mode (Handle).

3.3 Master Setting Mode

Master Setting Mode is separate mode for instrument/music genre/style/BPM/volume change. (Please refer to the Figure 3 for the details.)

3.4 Pattern Composing Mode

Pattern composing mode is a mode to turn on/off each part of the selected music instrument and style (as chosen from the Master Setting Mode).

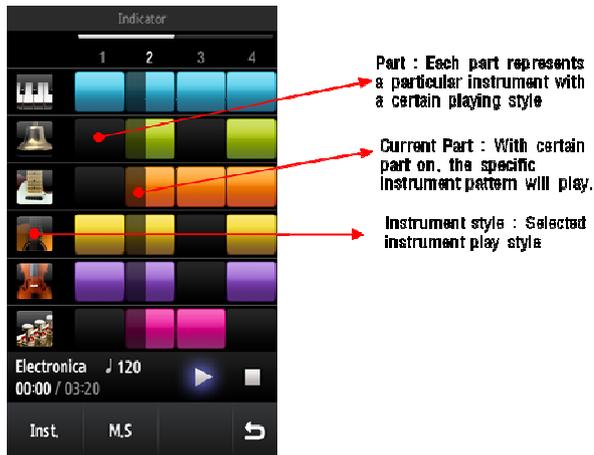


Figure 4. The Pattern Composing Mode.

4. Additional Functions

There are several additional functions that make 'the soloist' more interesting.

For the solo performance, the motion (up/down tilting) of the mobile device can replace the melody creation based on the touch (although the default is set to be the touch-based mode)

Not only the motion-based melody creation, but the music style recommendation and pattern composing can be replaced with 'shake' motion of the mobile device.

For example, if the user shake the mobile device fast, then the fast music style and template will be chosen at Master Setting Mode (on the other hand, slow shake means slow music).

In case of the Pattern Composing Mode, when the user shakes the mobile device slow, small number of the music part will be turned on. (on the other hand, fast shake turns on more parts)

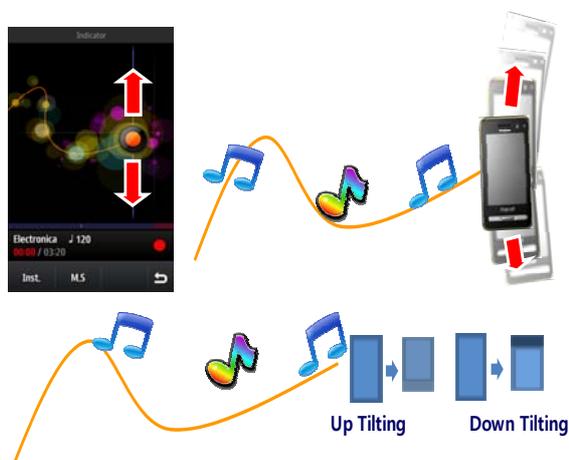


Figure 5. Melody Creation based on the 'Tilting' Motion of the mobile device.

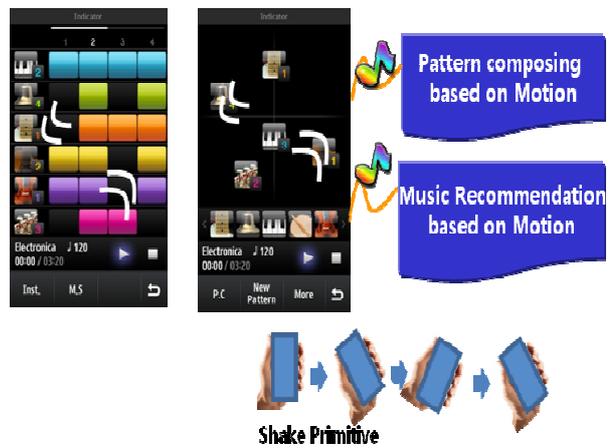


Figure 6. Music recommendation and pattern composing based on 'Shake' Motion of the mobile device.

Also, the created melody and the composed background music can be applied to various interesting audio effects (such as Echo, Crystal Hall or Live etc.), as shown below.



Figure 7. The Sound Effect Mode on created music.

Music genre/style/template/BPM is recommended based on the preview image of the camera or the photo stored at the user's mobile device.



Figure 8. Music recommendation using camera or photo

The block diagram for the software structure of the music composing and synthesizing engine (MIDI based) is shown below.

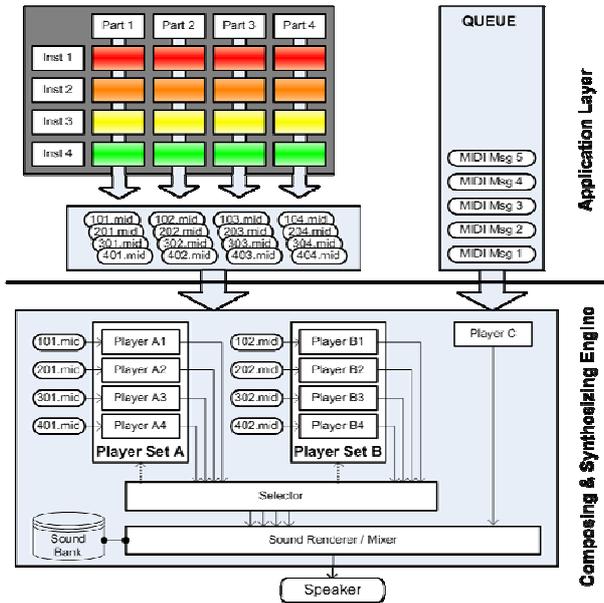


Figure 9. The music composing and synthesizing engine.

5. Conclusion

In this demo presentation, we have presented and demonstrated our interactive music studio application, 'The Soloist'. This is a novel concept application for mobile device with touch, motion and camera functions embedded. The created music from this music creation application can be used as a ring-tone/alarm for the user's mobile device or be shared with others based on any application store or various network connections.

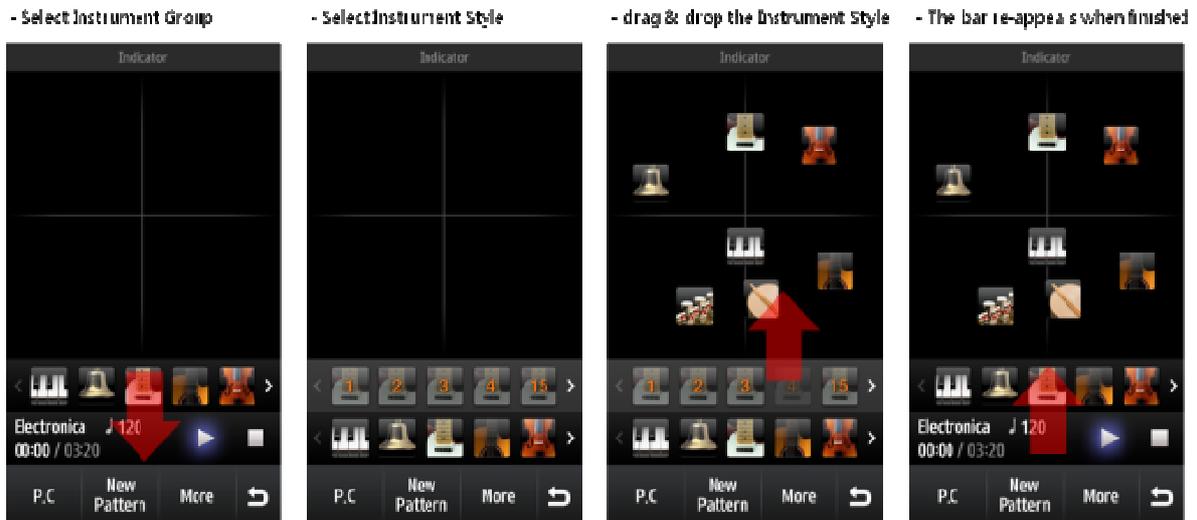


Figure 3. The Master Setting Mode